

Simulating the Spatial-Temporal Patterns of Anthropogenic Climate Change
A Workshop in the Bridging Disciplines, Bridging Scale Series

Supported by the
[Los Alamos Institute for Advanced Studies](#),
[LANL Center for Nonlinear Studies](#),
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For decades, Climate System Models (CSMs) have been the primary tool used to understand the environmental impacts of anthropogenic climate change. Now these same models are faced with a new and significantly more complicated mission: provide information of sufficient precision and resolution to support the wide spectrum of policy initiatives that will be developed to address anthropogenic climate change. This workshop will focus on the challenge of providing policy-relevant knowledge of anthropogenic climate change through numerical simulation.

Several very different approaches are being explored in order to obtain the requisite knowledge needed to develop and evaluate policy alternatives. The workshop will survey, assess and gauge the feature promise of the leading approaches: dynamic downscaling with limited-area simulations, empirical statistical downscaling, quasi-uniform global climate modeling and variable-resolution global climate modeling. Each approach will be evaluated in terms its current ability to “add value” to the regional climate change knowledge-base, the current challenges preventing the method from reaching its full potential and the future outlook for the method’s ability to contribute to regional climate change science. In order to provide a grounding to the discussions, the geographical focus will be North America (or parts of North America) and the impacts focus will be on water resources.

Two major outcomes of this workshop are expected. First, the workshop findings will be summarized in a white paper and presented to the DOE Climate Change Prediction Program for consideration during future program development activities. Second, the workshop white paper will be expanded into a review article discussing the merits of the various approaches to simulating the spatial-temporal patterns of anthropogenic climate change.

Funding is in place to conduct workshops in the Bridging Disciplines, Bridging Scales Series once per year for the next five years. Over the duration of the activity, we expect to build connections between regional climate change information and systems closely linked to socio-economic function, such as water availability, ecosystem services and energy production. Travels funds are available.